









TTCB and condenser tube cutting procedure

Doc.Id. AMSTR-NLR-PR-008 8 of 10

Issue

January 2009 issue 3.0

	Tube cutting procedure sheet			company:	NLX
	Fill in by hand.		engineer:		J.v.E
Step	Action	Monitoring	Value		Result
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	1		
2	Record pipe part drawing number	ETEggs-08.	8-19	9	-19.9
သ	Make picture of part ti	Record picture time as on photo			The second secon
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			
5	Clean outside tube with IPA and lint-free cloth				
6	Record cutting equipment used t	Manufacturer, type/serial number	ı		14:42/
7	Record filter type s	Manufacturer/filter size	0.45 µm		Jebr
∞	Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or Argon)bottle delivering gaseous Argon gas as shown in figure.		t		

Deburing with. Quality products techniq 14:43. Feb 26. 2009 Scr. no. 040681. Cordless chiver















TTCB and condenser tube cutting procedure

Doc.ld.	Page
MSTR-NLR-PR-008	9 of 10

Date	Issue
January 2009	issue 3.0

16	15	14	13	12	11	10	9		Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Cutting position Argon	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			Check flow at outside		Pressure		Monitoring		
						1	0-4 bar		Value	engineer:	company:
						9			Result		
				5.	Thew gas		3 4 10 15	14:36 20/02/2009	Comment	location:	date:
<	ς	C	-	0	?		7	5	2	1	















TTCB and condenser tube cutting procedure

Doc.Id. Issue AMSTR-NLR-PR-008 issue 3.0 8 of 10

Date

January 2009

Tube cutting procedure sheet		company:	NLK	date: 26/6c/
Fill in by hand.		engineer:	T.v. ES	location: 17/60
Step Action Mon	Monitoring	Value	Result	Comment
1 Record model (FM1/FM2/QM) for which the cutting of tubes is Mod	s Model	•		
performed	FM2)
2 Record pipe part drawing number	E75998000	DOS. 19.	9	DRS Prece
3 Make picture of part Reco	Record picture			1 sn; he:50
time	time as on photo			of the Oh bush
4 Perform visual inspection inlet and outlet tube Clea	Clean/particles/			0
grease	ase			
5 Clean outside tube with IPA and lint-free cloth				
			٠	\$
6 Record cutting equipment used Man	Manufacturer,	'		Metabo cu
type	type/serial number			0227 400
7 Record filter type Man	Manufacturer/filter	0.45 μm		/
size				,
8 Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or		1		3
Argon hottle delivering geseous Argon ges as shown in figure				















TTCB and condenser tube cutting procedure

Doc.Id. AMSTR-NLR-PR-008 9 of 10

Issue

bar
Value Result
engineer:
company:

















TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 8 of 10

Issue

~	7	6	2	4	ω	2	1	Step		
Connect the filter and a clean flexible (silicone) hose to a N_2 -(or Argon)bottle delivering gaseous Argon gas as shown in figure.	Record filter type	Record cutting equipment used	Clean outside tube with IPA and lint-free cloth	Perform visual inspection inlet and outlet tube	Make picture of part	Record pipe part drawing number	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Action	Fill in by hand.	Tube cutting procedure sheet
	Manufacturer/filter size	Manufacturer, type/serial number		Clean/particles/ grease	Record picture time as on photo		Model #77 2	Monitoring		
ī	0.45 μm	1		8		24.3	-	Value	engineer:	company:
						3990-1243g.		Result	J. VES	MILL
(puge wifiler	pipe culter			17:13.	4.30.	preheater	Comment	location: AT	date: 26/04/2004









TTCB and condenser tube cutting procedure

Doc.Id. AMSTR-NLR-PR-008 9 of 10

Issue

16	15	14	13	12		11		10	9			Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	→ Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			outside	Check flow at			Pressure			Monitoring		
								ı	0-4 bar			Value	engineer:	company:
120												Result		
												Comment	location:	date:
		th		-	-								-	















TTCB and condenser tube cutting procedure

Page

Doc.Id.

AMSTR-NLR-PR-008 8 of 10

Issue

January 2009 issue 3.0

					Argon)bottle delivering gaseous Argon gas as shown in figure.	
	0		•		Connect the filter and a clean flexible (silicone) hose to a N_2 -(or	∞
	Wweld ghs			size		
	filder puge		0.45 µm	Manufacturer/filter	Record filter type	7
	. '/			type/serial number		
	Pip cutter		T	Manufacturer,	Record cutting equipment used	6
					Clean outside tube with IPA and lint-free cloth	5
				grease		
				Clean/particles/	Perform visual inspection inlet and outlet tube	4
	Section 1 and 1 an			time as on photo		
	~			Record picture	Make picture of part	ω
	3 26. Loog	1,	C			
	60%1 9	10-12-43	F7394		Record pipe part drawing number	2
)		772	performed	
	pre heater		ì	Model	Record model (FM1/FM2/QM) for which the cutting of tubes is	1
	Comment	Result	Value	Monitoring	Action	Step
1	location: 77.	JIE	engineer:		Fill in by hand.	
9	date: 26/02/2009	NLK	company:		Tube cutting procedure sheet	

Se r. no c40 68, (deburent)
see also 14,43 20 Horlesoy











TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 Page 9 of 10

Date	Issue
January 2009	issue 3.0

16	15	14	13	12		11		10	9		Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Cutting position Argon	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			outside	Check flow at			Pressure	8	Monitoring		
200								ı	0-4 bar		Value	engineer:	company:
*											Result		
	^										Comment	location:	date:
	•	5	-								2	-	











	1
AMSTR-NLR-PR-008	Ooc.Id.
8 of 10	Page

TTCB and condenser tube cutting procedure

Date Issue January 2009 issue 3.0

	~	7	6	5	4	ω	2	Н	Step		
After catting and de bus 1. Tapping on while cloth 2. Purge with closed out led Xdditional tapping with while	Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or Argon)bottle delivering gaseous Argon gas as shown in figure.	Record filter type	Record cutting equipment used	Clean outside tube with IPA and lint-free cloth	Perform visual inspection inlet and outlet tube	Make picture of part	Record pipe part drawing number	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Action	Fill in by hand.	Tube cutting procedure sheet
le cloth		Manufacturer/filter size	Manufacturer, type/serial number		Clean/particles/ grease	Record picture time as on photo		Model + n2	Monitoring		
Egoi	1	0.45 μm	1					1	Value	engineer:	company:
llary	Ç	944						7	Result	J.v. Es	NLK
no particles for	the my	Puller welder 1	13:30	1 Fest	withtoral	13:30 27 FL v	no drawing of	Pump and lity	Comment	location: / MT /	date: 27/00/2009
oossible and	.5		7	5	7		2		~		













TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 Page

9 of 10

Issue Date

	15	14	13	12		11		10	9			Step			
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	→ Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet	
		Flat square surface			outside	Check flow at			Pressure			Monitoring			
								1	0-4 bar			Value	engineer:	company:	
												Result	7.0 85	NLK	
	type								+ 51,017 cap.1			Comment	location:	date: 27/02/200	
	7								100			2		9	















Thermal Control AMS Tracker

	Doc.Id.	Page
:::::::::::::::::::::::::::::::::::::::	AMSTR-NLR-PR-008	8 of 10

January 2009	ure Date	TTCB and condenser tube cutting proced
issue 3.0	Issue	Subsystem

6	votal take				Argon)bottle delivering gaseous Argon gas as shown in figure.	
-	good bribmoon		1		Connect the filter and a clean flexible (silicone) hose to a N2-(or	∞
				size		
	1		0.45 µm	Manufacturer/filter	Record filter type	7
600	9			type/serial number		
-	Ocharine with		1	Manufacturer,	Record cutting equipment used	6
•						
	46.81				Clean outside tube with IPA and lint-free cloth	5
				grease		
1				Clean/particles/	Perform visual inspection inlet and outlet tube	4
	13:25			time as on photo		
	18:21			Record picture	Make picture of part	ω
~	1	C				
	No chawing	7			Record pipe part drawing number	2
7	i cally &			FILE	performed	
	permy ipplet		r	Model +7	Record model (FM1/FM2/QM) for which the cutting of tubes is	_
1	Comment //	Result	Value	Monitoring	Action	Step
	location: / MY	J.v. Es	engineer:		Fill in by hand.	
0	date: 27/02/2009	MR	company:		Tube cutting procedure sheet	

whiteloff

After carting & deburring with gravity & the Eapping or char white sollar ye tabe the second chek with sagillar ye tabe











TTCB and condenser tube cutting procedure

Page

9 of 10

Doc.Id. Issue

AMSTR-NLR-PR-008

January 2009 issue 3.0

Date

16	15	14	13	12		11		10	9			Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth &	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			outside	Check flow at			Pressure		X.	Monitoring		
								1	0-4 bar			Value	engineer:	company:
												Result		
	tope								55 CPR.	3 3		Comment	location:	date:
	5.		,						ζ			2		











TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 Page

8 of 10

Issue

January 2009 issue 3.0

	-			Argon)bottle delivering gaseous Argon gas as shown in figure.	
		ī		Connect the filter and a clean flexible (silicone) hose to a N2-(or	8
l			size		
		$0.45 \mu m$	Manufacturer/filter	Record filter type	7
			type/serial number		
		1	Manufacturer,	Record cutting equipment used	6
l					
				Clean outside tube with IPA and lint-free cloth	5
ı			grease		
			Clean/particles/	Perform visual inspection inlet and outlet tube	4
			time as on photo		
1			Record picture	Make picture of part	3
		•			
	15	dus	pa	Record pipe part drawing number	2
			F112	performed	
		1	Model	Record model (FM1/FM2/QM) for which the cutting of tubes is	
100	Result	Value	Monitoring	Action	Step
	7.0	engineer:		Fill in by hand.	
	MK	company:		Tube cutting procedure sheet	

1+ Metabo 0227 400











TTCB and condenser tube cutting procedure

Page

9 of 10

Date	Issue	Doc.Id.
January 2009	issue 3.0	AMSTR-NLR-PR-008

January 2009

16	15	14	13	12		11		10	9			Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			outside	Check flow at			Pressure		1 19	Monitoring		
								1	0-4 bar	1		Value	engineer:	company:
												Result		
										07111		Comment	location:	date:
<	7	7	4	7		<		7				2		















TTCB and condenser tube cutting procedure

Doc.Id. AMSTR-NLR-PR-008

8 of 10

Issue

January 2009 issue 3.0

∞	7	6	5	4	ω	2	1	Step		
Connect the filter and a clean flexible (silicone) hose to a N_2 -(or Argon)bottle delivering gaseous Argon gas as shown in figure.	Record filter type	Record cutting equipment used	Clean outside tube with IPA and lint-free cloth	Perform visual inspection inlet and outlet tube	Make picture of part	Record pipe part drawing number	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Action	Fill in by hand.	Tube cutting procedure sheet
	Manufacturer/filter size	Manufacturer, type/serial number		Clean/particles/ grease	Record picture time as on photo		Model 7772	Monitoring		
1	0.45 μm	T				pan Iz.	1	Value	engineer:	company:
						J2.		Result	J. v.Es	NIR
	purgegas Piter	Ser no 040 681 condless		12:06	11:61 31 fre	saw Coasticles	Pumpoullet.	Comment	location: / /77	date: 27/02/2009
		5.				-		2		8

First de buging oez 7400

















TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 Page 9 of 10

Issue January 2009

issue 3.0

16	15	14	13	12		11		10	9			Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	→ — → Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			outside	Check flow at			Pressure		vei	Monitoring		
10	2							1	0-4 bar			Value Result	engineer:	company:
								slow more	754P			Comment	location:	date:
<	7	<	5					erc.)	trall !			2		















TTCB and condenser tube cutting procedure

Page

8 of 10

January 2009

ξ	Doc.Id
ssue	
issue 3.0	AMSTR-NLR-PR-008

~	7	6	5	4	ω	2	1	Step		
Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or	Record filter type	Record cutting equipment used	Clean outside tube with IPA and lint-free cloth	Perform visual inspection inlet and outlet tube	Make picture of part	Record pipe part drawing number	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Action	Fill in by hand.	Tube cutting procedure sheet
	Manufacturer/filter size	Manufacturer, type/serial number		Clean/particles/ grease	Record picture time as on photo	ET 595 8-08	Model FM2	Monitoring		
ı	0.45 μm	·				8-19-19	1	Value	engineer:	company:
								Result	J.v. Es	NLK
	Parge for the	deburning with			13:53.	Thur on live		Comment	location: / HT.	date: 27/02/2009
	/			ı		100				

















TTCB and condenser tube cutting procedure

Page

Doc.ld. AMSTR-NLR-PR-008 9 of 10

Issue Date

16	15		14	13	12		11		10	9				Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	perform visual inspection of cut surface	Disconnect tube, clean outside with IPA and lint free cloth &	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part		Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet
			Flat square surface			outside	Check flow at			Pressure			9 	Monitoring		
									1	0-4 bar				Value	engineer:	company:
														Result	IVE	NLK
				7	14:27-14:					10 ZPR		,		Comment	location:	date: 27/02/2
		1		1				1						1		0.













TTCB and condenser tube cutting procedure

Page

8 of 10

Doc.ld. AMSTR-NLR-PR-008 Issue

Date

×	7	6	5	4	υ.	2	1	Step		
Connect the filter and a clean flexible (silicone) hose to a N_2 -(or	Record filter type	Record cutting equipment used	Clean outside tube with IPA and lint-free cloth	Perform visual inspection inlet and outlet tube	Make picture of part	Record pipe part drawing number	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Action	Fill in by hand.	Tube cutting procedure sheet
	Manufacturer/filter size	Manufacturer, type/serial number		Clean/particles/ grease	Record picture time as on photo	ET 5990-		Monitoring		
T	0.45 μm	r				8-19.	ı	Value	engineer:	company:
		Ca				Š)	Result	JuEs	NLR
	prografilter	been cordless driver of to 6			13:53	reference him		Comment	location: / /77.	date: 27/02/200
		300			-			2	1	0













TTCB and condenser tube cutting procedure

Page

9 of 10

Doc.ld. AMSTR-NLR-PR-008

Issue Date

	Tube cutting procedure sheet		company:		date: 27/02/20	309
	Fill in by hand.		engineer:		location:	(
Step	Action	Monitoring	Value	Result	Comment	2
	Cutting position				10/0/1	
	Argon				10111	7
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			<
10	Flow gaseous nitrogen/argon through the hose prior to connect to the		I			~
	tube part					
11	Connect the flexible hose to the tube as shown in above figure. Set a	Check flow at				_
	fixed gaseous flow	outside				-
12	Cut tube				14:34 HE:111	6
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth &	Flat square surface				
	perform visual inspection of cut surface					\vdash
15	Cover tube end with caps and store in a clean box or clean					\ .
	environment for further integration					
16	End cutting of part (mention part number at comments)					















TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 Page 8 of 10

Date	Issue	
January 2009	issue 3.0	

	7	6	2	4	ω	2	1	Step		
_	H			<u> </u>	ы		7	-		
Connect the filter and a clean flevible (cilicone) have to a N (or)		Record cutting equipment used	Clean outside tube with IPA and lint-free cloth	Perform visual inspection inlet and outlet tube	Make picture of part	Record pipe part drawing number	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Action	Fill in by hand.	Tube cutting procedure sheet
	Manufacturer/filter size	Manufacturer, type/serial number		Clean/particles/ grease	Record picture time as on photo	866513	Model FM2	Monitoring		
ī	0.45 µm	1				98-00-)	Value	engineer:	company:
						19.12		Result	ATT. ES	NLR
(f. Herd brown	Retako + 02		15:26				Comment	location: MT	date: 27/02/2009
	1	025	<	7		7	Ž	2		9













TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 Page 9 of 10

Issue Date January 2009 issue 3.0

16	15	14	13	12		11		10	9			Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			outside	Check flow at			Pressure			Monitoring		
								1	0-4 bar			Value	engineer:	company:
												Result		
			sectoon por	<i>D</i>					10 6/17			Comment	location:	date: 27/02/20
	1	7	6 -	7	7	`	1	7	7 -	<		2	(0













Thermal Control **AMS Tracker**

Doc.ld.	Page
 AMSTR-NLR-PR-008	8 of 10

	TTCB and condenser tube cutting procedure	Subsystem
9	Date	Issue
	January 2009	issue 3.0

company: LLK date: 27/02/200 engineer: J.v. Es location: 177- g Value Result Comment 72 ET 5998-08-19.17 Et 23. photo icles/ inumber rerr,	_				-		 											
Clean/particles/ grease Manufacturer/filter Manufacturer/filter Size Company: LK date: 27/62/200 Result Comment Model Comment Co		~		7		6	5		4		ω		2		1	Step		
company: NLK date: 27/02/200 engineer: J.v. Es location: 177- Value Result Comment Sgg 8-08-19.17 Evaporation: 15: 23. 27/01/07 Tekabo out t abour ovoi	Argon)bottle delivering gaseous Argon gas as shown in figure.	Connect the filter and a clean flexible (silicone) hose to a N_2 -(or		Record filter type		Record cutting equipment used	Clean outside tube with IPA and lint-free cloth		Perform visual inspection inlet and outlet tube		Make picture of part				Record model (FM1/FM2/QM) for which the cutting of tubes is		Fill in by hand.	Tube cutting procedure sheet
pany: NLK date: 27/02/200 neer: J.v. Es location: 177- le Result Comment E vap optification 15: 23. 27/02/07 Tekabo out 4 abour oyou pum Ouge out 6 gas Se	4		size	Manufacturer/filter	type/serial number	Manufacturer,		grease	Clean/particles/	time as on photo	Record picture		7	1112	Model	Monitoring		
Comment Evaporation: Comment Comment Asi 23. 27/orling About oxol Party gas 5c		1		0.45 µm		1							5990-0		1	Value	engineer:	company:
nent 151 23. 151 23. 151 23. 152 23. 154 20 out Abour orot Ouge out	1												£1.61-8			Result	1	NLK
2366	4/5/	(, C bas zen	Duge orly	+ deben 0406	netabo outros			•	57/orlos	15: 23.	2000	Frapology				location: 177	27

Remark internal de burning with veg's











TTCB and condenser tube cutting procedure **Thermal Control** Subsystem

AMS Tracker

Doc.Id. Issue Page AMSTR-NLR-PR-008 issue 3.0 9 of 10

Date

January 2009

closed	0				End cutting of part (mention part number at comments)	16
<					Cover tube end with caps and store in a clean box or clean environment for further integration	15
<				Flat square surface	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	14
See first purper					Make picture of set-up and record picture time	13
7					Cut tube	12
•				outside	fixed gaseous flow	
<				Check flow at	Connect the flexible hose to the tube as shown in above figure. Set a	11
					tube part	
v			ľ		Flow gaseous nitrogen/argon through the hose prior to connect to the	10
10 LPH V			0-4 bar	Pressure	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	9
4					Cutting position Argon	
nt V	Comment	Result	Value	Monitoring	Action	Step
	location:		engineer:		Fill in by hand.	
27/02/2009	date:		company:		Tube cutting procedure sheet	

ofter welling















TTCB and condenser tube cutting procedure

5	3.00	S
1	0	Tra
	ont	cke
	0	7

Doc.ld. AMSTR-NLR-PR-008 Page 8 of 10

Date	Issue
January 2009	issue 3.0

~	7	6	2	4	ω	2	1	Step		
Connect the filter and a clean flexible (silicone) hose to a N_2 -(or Argon)bottle delivering gaseous Argon gas as shown in figure.	Record filter type	Record cutting equipment used	Clean outside tube with IPA and lint-free cloth	Perform visual inspection inlet and outlet tube	Make picture of part	Record pipe part drawing number	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Action	Fill in by hand.	Tube cutting procedure sheet
	Manufacturer/filter size	Manufacturer, type/serial number		Clean/particles/ grease	Record picture time as on photo		Model 7772	Monitoring		
Ī	0.45 µm	1					ı	Value	engineer:	company:
								Result	J.v.F.	NLK
	Silter	bibe consex.	*		16:59	16:59 draway	Acces Peltor	Comment	location:	date: 21/02/2009
	7	7	,<	, 5	6	7		2		*















TTCB and condenser tube cutting procedure

Doc.ld. Page AMSTR-NLR-PR-008 9 of 10

Issue

	15	_	14	13	12		11		10	9			Step			
	Cover tube end with caps and store in a clean box or clean environment for further integration		Disconnect tube, clean outside with IPA and lint free cloth &	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	→ Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet	
			Flat square surface			outside	Check flow at			Pressure		1	Monitoring			
									1	0-4 bar			Value	engineer:	company:	
													Result	T. E	NLK	
	After forton	10 10		,	17:04 +, 170	,	16:89				9 4111	1 600	Comment	location:	date: 27/02/200	
_	2	,	<		2	1	<	>	_	7	7		2		9	











TTCB and condenser tube cutting procedure

Doc.Id. Issue Date AMSTR-NLR-PR-008 January 2009 issue 3.0 8 of 10

0.45 µm
Value Result
engineer: Tuks
company: NLK

Deburing with Metabo and cordlus driver 040681

















TTCB and condenser tube cutting procedure

Doc.Id. AMSTR-NLR-PR-008 9 of 10

January 2009 issue 3.0

Issue

16	15	14	13	12	1		10	9		Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Cutting position Argon	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			outside outside	2		Pressure		Monitoring		
							ı	0-4 bar	12	Value	engineer:	company:
							\			Result	FARE	NLR
	coverd by to	continue her	cleaned with	11:20	11:14			7 10 L PM		Comment	location: 77.	date: 02/03/ 2009
<	2	27	F		7	+	7	<	7	2		











TTCB and condenser tube cutting procedure

Date	Issue	Doc.ld.	Page
January 2009	issue 3.0	AMSTR-NLR-PR-008	8 of 10

8 of 10

	Tube cutting procedure sheet		company:	SIR	date: 02 /7
	Fill in by hand.		engineer:	J.v. Es	location: /7
Step	Action	Monitoring	Value	Result	Comment
	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model F/72	1		` \
2	Record pipe part drawing number	E75990-	-00-19	7.	Special bend
3	Make picture of part	Record picture			11:06 0
		time as on photo			MAR. 2
4	Perform visual inspection inlet and outlet tube	Clean/particles/			
		grease			2
5	Clean outside tube with IPA and lint-free cloth				
6	Record cutting equipment used	Manufacturer,	I		
		type/serial number			
7	Record filter type	Manufacturer/filter	$0.45~\mu\mathrm{m}$		sob sand
		size			Set-up
∞	Connect the filter and a clean flexible (silicone) hose to a N_2 -(or		•		
	Argon hottle delivering geseous Argon ges as shown in figure				

(one portal section) check on cleantiness of the Spot welders















TTCB and condenser tube cutting procedure

Doc.Id. AMSTR-NLR-PR-008 Issue Page issue 3.0 9 of 10

Date

January 2009

16 End c		15 Cove	perfo	14 Disco	13 Make	12 Cut tube	fixed	11 Conn	tube part	10 Flow	9 Limit (0-4b)				Step Action	Fill i	Tube
End cutting of part (mention part number at comments)	1	Cover tube end with caps and store in a clean box or clean	perform visual inspection of cut surface	Disconnect tube, clean outside with IPA and lint free cloth &	Make picture of set-up and record picture time	ube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part		→ Argon	Cutting position	n The state of the	Fill in by hand.	Tube cutting procedure sheet
				Flat square surface			outside	Check flow at			Pressure				Monitoring		
										1	0-4 bar		9		Value	engineer:	company:
															Result		5-
02/-3/2000	See p1 (3:42											dus of char	10LPM		Comment	location:	date:
00	(*					~		5	_			1.			2		

















Issue	Doc.Id.	Page
issue 3.0	AMSTR-NLR-PR-008	8 of 10

January 2009

TTCB and condenser tube cutting procedure	Cubystelli
Date	issue

										_								_
0	×		7		6		5		4		ယ		2		1	Step		
Argon)bottle delivering gaseous Argon gas as shown in figure.	-		Record filter type		Record cutting equipment used		Clean outside tube with IPA and lint-free cloth		Perform visual inspection inlet and outlet tube		Make picture of part		Record pipe part drawing number	performed	Record model (FM1/FM2/QM) for which the cutting of tubes is	Action	Fill in by hand.	Tube cutting procedure sheet
		size	Manufacturer/filter	type/serial number	Manufacturer,			grease	Clean/particles/	time as on photo	Record picture		[7]	+112	Model	Monitoring		
•			0.45 µm		1			1				0	75992		1	Value	engineer:	company:
													5998-08-4.3			Result	J.v.Es	NIR
				debu equipment	Righabo + ozztuc			20.71	re-cut	10.06	201	to Enbow 43	Connection	inlet cuthing	Pellis pips	Comment	location: 77	date: 02/03/2009
				1040000	7400	•	5	•	†	1						~		9

April COH Contamination cut Euber April CoH Contamination cut Euber are inspected and they are one.











TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 9 of 10

January 2009 issue 3.0

Issue

tiep Action Couting position Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part Connect the flexible hose to the tube as shown in above figure. Set a check flow at fixed gaseous flow Cut tube Cut tube Cut tube part Disconnect tube, clean outside with IPA and lint free cloth & Flat square surface perform visual inspection of cut surface Cover tube end with caps and store in a clean box or clean curvironment for further integration End cutting of part (mention part number at comments)		Tube cutting procedure sheet		company:	NLK	date:	
Cauting position Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part Flow gaseous nitrogen/argon through the hose prior to connect to the tube part Connect the flexible hose to the tube as shown in above figure. Set a Check flow at fixed gaseous flow Cut tube Cut tube Disconnect tube, clean outside with IPA and lint free cloth & Flat square surface perform visual inspection of cut surface Flow gaseous flow Check flow at outside Check flow at outside Flat square surface perform visual inspection of cut surface perform visual inspection of cut surface End cutting of part (mention part number at comments)	Step		Monitoring	Value	Re	Result	
Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part O Flow gaseous nitrogen/argon through the hose prior to connect to the tube part Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow Cut tube Make picture of set-up and record picture time Disconnect tube, clean outside with IPA and lint free cloth & Flat square surface perform visual inspection of cut surface Cover tube end with caps and store in a clean box or clean environment for further integration End cutting of part (mention part number at comments)							
Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part 0 Flow gaseous nitrogen/argon through the hose prior to connect to the tube part 1 Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow 2 Cut tube 3 Make picture of set-up and record picture time 4 Disconnect tube, clean outside with IPA and lint free cloth & Flat square surface perform visual inspection of cut surface 5 Cover tube end with caps and store in a clean box or clean environment for further integration 6 End cutting of part (mention part number at comments)							
Flow gaseous nitrogen/argon through the hose prior to connect to the tube part Connect the flexible hose to the tube as shown in above figure. Set a Check flow at fixed gaseous flow Cut tube Make picture of set-up and record picture time Disconnect tube, clean outside with IPA and lint free cloth & Flat square surface perform visual inspection of cut surface Cover tube end with caps and store in a clean box or clean environment for further integration End cutting of part (mention part number at comments)	9	low	Pressure	0-4 bar			47017
Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow Cut tube Make picture of set-up and record picture time Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface Cover tube end with caps and store in a clean box or clean environment for further integration End cutting of part (mention part number at comments)	10	ow gaseous nitrogen/argon through the hose prior to connect to the be part		ı			
Cut tube Make picture of set-up and record picture time Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface Cover tube end with caps and store in a clean box or clean environment for further integration End cutting of part (mention part number at comments)	11		Check flow at				
Cut tube Make picture of set-up and record picture time Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface Cover tube end with caps and store in a clean box or clean environment for further integration End cutting of part (mention part number at comments)			outside		_		
Make picture of set-up and record picture time Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface Cover tube end with caps and store in a clean box or clean environment for further integration End cutting of part (mention part number at comments)	12	ut tube			_		
Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface Cover tube end with caps and store in a clean box or clean environment for further integration End cutting of part (mention part number at comments)	13	ake picture of set-up and record picture time			_		13:07 Mar. 2.2000
perform visual inspection of cut surface Cover tube end with caps and store in a environment for further integration End cutting of part (mention part number at co	14		Flat square surface				
Cover tube end with caps and store in a environment for further integration End cutting of part (mention part number at co		rform visual inspection of cut surface					
	15	in a					
		vironment for further integration					
	16	nd cutting of part (mention part number at comments)					

















TTCB and condenser tube cutting procedure

Doc.ld.

8 of 10

AMSTR-NLR-PR-008

Issue

∞	7	6	S	4	ω	2	-	Step		
Connect the filter and a clean flexible (silicone) hose to a N_2 -(or Argon)bottle delivering gaseous Argon gas as shown in figure.	Record filter type	Record cutting equipment used	Clean outside tube with IPA and lint-free cloth	Perform visual inspection inlet and outlet tube	Make picture of part	Record pipe part drawing number	performed performed		Fill in by hand.	Tube cutting procedure sheet
	Manufacturer/filter size	Manufacturer, type/serial number		Clean/particles/ grease	Record picture time as on photo		TM2	Monitoring		
1	0.45 μm	,			8		1	Value	engineer:	company:
								Result	J.v. Es	NLR
,	punge filter	pipe catter			10:21 after cu	check, cat	clean liness	Comment	location: /7	date: 1/03/2009
7					13			2		











TTCB and condenser tube cutting procedure

Doc.Id. Issue AMSTR-NLR-PR-008 January 2009 issue 3.0

9 of 10

Tube cutting procedure sheet company: Fill in by hand. Cutting position Cutting position Cutting position Argon Cutting position Argon Cutting position Argon Flow gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part Flow gaseous nitrogen/argon through the hose prior to connect to the tube part Connect the flexible hose to the tube as shown in above figure. Set a Check flow at	Monitoring Pressure Pressure
ing	company: engineer: Value 0-4 bar
company: engineer: Value 0-4 bar	eer:
	Result

10:21 0/3/2009









TTCB and condenser tube cutting procedure

AMSTR-NLR-PR-008 8 of 10

Contomin-

Doc.Id.

Issue January 2009 issue 3.0

			_						,				 						
		∞		7		6		5		4		ω	2		_	Step			
O / Visual	Argon)bottle delivering gaseous Argon gas as shown in figure.	Connect the filter and a clean flexible (silicone) hose to a N_2 -(or		Record filter type		Record cutting equipment used		Clean outside tube with IPA and lint-free cloth		Perform visual inspection inlet and outlet tube		Make picture of part	Record pipe part drawing number	performed	Record model (FM1/FM2/QM) for which the cutting of tubes is	Action	Fill in by hand.	Tube cutting procedure sheet	
inspection			size	Manufacturer/filter	type/serial number	Manufacturer,			grease	Clean/particles/	time as on photo	Record picture		7111	Model 777	Monitoring			
)		1		0.45 µm		-									1	Value	engineer:	company:	
hound	>					7										Result	IUF	NCK	
and bearing the			1 was ser yo	5	2 Limes debur	softe carter	1					20:21	toutlet cu	heater julet	Cold artort	Comment	location:	date: 02/03/2009	
2					•	7							A	,	5	~			
			_	^		-	7720						.5.	3					

dones

Very likely caused by cleaning agent after soldering COH.

The COM is cleaned a by panying I ph through I all night.

The Visual inspection showed clean limes in the morning.













TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 9 of 10

Date	Issue
January 2009	issue 3.0

16	,	15		14	13	12		11		10	9			Step		
End cutting of part (mention part number at comments)		Cover tube end with caps and store in a clean box or clean	perform visual inspection of cut surface	Disconnect tube, clean outside with IPA and lint free cloth &	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet
				Flat square surface			outside	Check flow at			Pressure		7 2	Monitoring		
										ı	0-4 bar			Value	engineer:	company:
														Result		
×					17:10 02/02/2009						711701			Comment	location:	date:
							<	`	<	5	Ċ	<		~		













Thermal Control AMS Tracker

TTCB and condenser tube cutting procedure Subsystem

Doc.ld. AMSTR-NLR-PR-008 Issue January 2009 issue 3.0 8 of 10

				Argon)bottle delivering gaseous Argon gas as shown in figure.	
				Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or	∞
well set - a	(size		
for showlders	7.18	0.45 µm	Manufacturer/filter	Record filter type	7
	Q		type/serial number		
		1	Manufacturer,	Record cutting equipment used	6
ì					
with white cla				Clean outside tube with IPA and lint-free cloth	S
checked after			grease		
Clean liness			Clean/particles/	Perform visual inspection inlet and outlet tube	4
	=	1.	time as on photo		
			Record picture	Make picture of part	ω
C	19.15.		8		
pipe cutting	19.16	0-08.	E7599	Record pipe part drawing number	2
to Peltres			7112	performed	
DES OF MX		Ĩ	Model	Record model (FM1/FM2/QM) for which the cutting of tubes is	1
Comment	Result	Value	Monitoring	Action	Step
location: 777	NIK	engineer:		Fill in by hand.	
date: 02/03/2009	J.v. Es	company:		Tube cutting procedure sheet	















TTCB and condenser tube cutting procedure

Doc.Id. AMSTR-NLR-PR-008 Page 9 of 10

Issue

issue 3.0

January 2009

16	15	1	13	12		11		10	9		Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Cutting position Argon	Action	Fill in by hand.	Tube cutting procedure sheet
		riai squaie suitace	Elat court curfoco		outside	Check flow at			Pressure		Monitoring		
								1	0-4 bar		Value	engineer:	company:
											Result		
	clean beg		NA						VODE XUDDY		Comment	location:	date:
5	.5	<	7	7	•	<		7	7		~		

















TTCB and condenser tube cutting procedure

Page

8 of 10

Doc.Id.

AMSTR-NLR-PR-008

Issue Date January 2009 issue 3.0

	Tube cutting procedure sheet		company:	MLX
	Fill in by hand.		engineer:	leer:
Step	Action	Monitoring	Value	е
1	Record model (FM1/FM2/QM) for which the cutting of tubes is	Model Fn2	1	
	performed	EY 5998 00	6	D- 19120
2	Record pipe part drawing number	8		9
3	Make picture of part	Record picture time as on photo		
4	Perform visual inspection inlet and outlet tube	Clean/particles/		
		grease	-	
5	Clean outside tube with IPA and lint-free cloth			
6	Record cutting equipment used	Manufacturer,	1	
		type/serial number		
7	Record filter type	Manufacturer/filter		0.45 µm
		size		
∞	Connect the filter and a clean flexible (silicone) hose to a N2-(or		1	
	Argon)bottle delivering gaseous Argon gas as shown in figure.			















TTCB and condenser tube cutting procedure

Doc.Id. Page

AMSTR-NLR-PR-008 9 of 10

Date

January 2009	ate
issue 3.0	sue

16	15		14	13	12		11		10	9			Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration		Disconnect tube, clean outside with IPA and lint free cloth &	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet
		,	Flat square surface			outside	Check flow at			Pressure			Monitoring		
									1	0-4 bar			Value	engineer:	company:
													Result	S. V. Es	NLK
													Comment	location:	date: 03/03/2009
													2		











TTCB and condenser tube cutting procedure

Doc.Id. Issue

AMSTR-NLR-PR-008

8 of 10

January 2009 issue 3.0

	Tube cutting procedure sheet		company:	MIL	date: \$ 3/3/2009
	Fill in by hand.		engineer:	J.1. Es	location: //
Step	Action	Monitoring	Value	Result	Comment
<u>, , , , , , , , , , , , , , , , , , , </u>	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model F/12	,		pump to
2	Record pipe part drawing number	ET 59	ET5990-08-19.25	5	
ω.	Make picture of part	Record picture time as on photo			13:48.03 Merch 2009
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			
5	Clean outside tube with IPA and lint-free cloth				
6	Record cutting equipment used	Manufacturer, type/serial number	1		Standard cufting
7	Record filter type	Manufacturer/filter size	0.45 µm		page gasa
∞	Connect the filter and a clean flexible (silicone) hose to a N_2 -(or				
	Argon)bottle delivering gaseous Argon gas as shown in figure.				

Tuductur we to the for Afine kebes















TTCB and condenser tube cutting procedure

Page

9 of 10

Doc.Id. AMSTR-NLR-PR-008

Issue January 2009 issue 3.0

16		15		14	13	12		11		10	9		Step		
End cutting of part (mention part number at comments)	environment for further integration	Cover tube end with caps and store in a clean box or clean	perform visual inspection of cut surface	Disconnect tube, clean outside with IPA and lint free cloth &	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Cutting position Argon	Action	Fill in by hand.	Tube cutting procedure sheet
				Flat square surface			outside	Check flow at			Pressure		Monitoring		
										1	0-4 bar		Value	engineer:	company:
													Result		
						13:48					8 LPM		Comment	location:	date:
	<	-	8	7	5	5			7	7	7	5	2	1	

















Thermal Co **AMS Tra** Subsyst

TTCB and condenser tube cutting procedure

em	ontrol	cker

COLID	Doc.ld.	Page
issue 3 0	AMSTR-NLR-PR-008	8 of 10

Issue	
(D	

January 2009

	+		~	2	7	
				(Argon)bottle delivering gaseous Argon gas as shown in figure.	
			1		Connect the filter and a clean flexible (silicone) hose to a N2-(or	∞
				size		Γ
			$0.45 \mu m$	Manufacturer/filter	Record filter type	7
	,			type/serial number		
	Sec x (below)		1	Manufacturer,	Record cutting equipment used	6
					Clean outside tube with IPA and lint-free cloth	5
				grease		
13	No puge possi			Clean/particles/	Perform visual inspection inlet and outlet tube	4
	7			time as on photo		
	14:27			Record picture	Make picture of part	ယ
		19.	1-00-	£ 15990-03	Record pipe part drawing number	7
Mu	Sizh Scrond a				performed	
	2005 AX		ı	Model	Record model (FM1/FM2/QM) for which the cutting of tubes is	
~	Comment	Result	Value	Monitoring	tep Action	Step
	location: hr	IVES	engineer:		Fill in by hand.	
	date: 63/63/2000	NIK	company:		Tube cutting procedure sheet	

A Paicua Shang Yang equip - proture 18:50 03/03/2009 motor spec.















TTCB and condenser tube cutting procedure

Doc.Id. Page

AMSTR-NLR-PR-008 **9** of 10

Issue

January 2009 issue 3.0

16	15		14	13	12		1		10	9			Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	perform visual inspection of cut surface	Disconnect tube, clean outside with IPA and lint free cloth &	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part		Cutting position Aroon	Action	Fill in by hand.	Tube cutting procedure sheet
		٠	Flat square surface			outside	Check flow at			Pressure			Monitoring		
									1	0-4 bar			Value	engineer:	company:
													Result		***************************************
										dry 40179	Daite capill	clear checked	Comment	location:	date:

















Thermal Control AMS Tracker

Subsystem

TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 8 of 10

ssue

January 2009 issue 3.0

Fill in by hand. Record model (FM1/FM2/QM) for which the cutting of tubes is performed performed. Record pie part drawing number Record pieture of part FT5998-249.23 All Perform visual inspection inlet and outlet tube time as on photo Clean particles/ Record cutting equipment used tube with IPA and lint-free cloth Record filter type Record filter type Record filter type Manufacturer, type/scrial number t		Tube cutting procedure sheet		company:	MM	date:
Action Action Monitoring Value Reserved model (FM1/FM2/QM) for which the cutting of tubes is performed Model FT/Z - Record model (FM1/FM2/QM) for which the cutting of tubes is performed Model FT/Z - - Record picture - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - <th< td=""><td></td><td>Fill in by hand.</td><td></td><td>engineer:</td><td>J.O.F</td><td>location:</td></th<>		Fill in by hand.		engineer:	J.O.F	location:
Record model (FM1/FM2/QM) for which the cutting of tubes is performed Record pipe part drawing number Record pipe part drawing number Record picture of part Make picture of part Record picture of part Record picture of part Clean outside tube with IPA and lint-free cloth Record cutting equipment used Record filter type Record filter type Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or Argon) bottle delivering gaseous Argon gas as shown in figure.	Step	Action	Monitoring	Value	Result	
Record pipe part drawing number Record pipe part drawing number ET5998-249 1/2 1/	34	odel (FM1/FM2/QM) for which the cutting of tubes is	Model F72	l		
Make picture of part Record picture time as on photo Clean/particles/ grease Clean outside tube with IPA and lint-free cloth Record cutting equipment used Record filter type Connect the filter and a clean flexible (silicone) hose to a N2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.	2	Record pipe part drawing number			19:23	
Perform visual inspection inlet and outlet tube Clean/particles/ grease Clean outside tube with IPA and lint-free cloth Record cutting equipment used Record filter type Record filter type Connect the filter and a clean flexible (silicone) hose to a N2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.	ÇJ	Make picture of part	Record picture time as on photo			
Record cutting equipment used Record filter type Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or Argon)bottle delivering gaseous Argon gas as shown in figure.	4		Clean/particles/ grease			
Record cutting equipment used Record filter type Record filter type Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or Argon)bottle delivering gaseous Argon gas as shown in figure. Manufacturer, type/serial number Manufacturer/filter size Size	5	Clean outside tube with IPA and lint-free cloth				
Record filter type Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or Argon)bottle delivering gaseous Argon gas as shown in figure.	6	Record cutting equipment used	Manufacturer, type/serial number	1		L
Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or Argon)bottle delivering gaseous Argon gas as shown in figure.	7	Record filter type	Manufacturer/filter size			
Algon Joonie den venng gaseous Algon gas as shown in righte.	∞	Connect the filter and a clean flexible (silicone) hose to a N ₂ -(or		ŧ		

prehat 16:44 estes per eguipant



















TTCB and condenser tube cutting procedure

Doc.Id. Page

9 of 10

AMSTR-NLR-PR-008

Issue Date January 2009 issue 3.0

16	15	14	13	12			10	9		Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Cutting position Argon	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			outside	Check flow at		Pressure		Monitoring		
							1	0-4 bar		Value	engineer:	company:
										Result		
										Comment	location:	date:

















TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 8 of 10

Issue January 2009 · issue 3.0

	∞		7		6		5		4		S		2		-	Step		
Argon)bottle delivering gaseous Argon gas as shown in figure.	Connect the filter and a clean flexible (silicone) hose to a N2-(or		Record filter type		Record cutting equipment used		Clean outside tube with IPA and lint-free cloth		Perform visual inspection inlet and outlet tube		Make picture of part		Record pipe part drawing number	performed	Record model (FM1/FM2/QM) for which the cutting of tubes is	Action	Fill in by hand.	Tube cutting procedure sheet
		size	Manufacturer/filter	type/serial number	Manufacturer,			grease	Clean/particles/	time as on photo	Record picture		E		Model	Monitoring		
	ş		0.45 µm		ſ							700	1 500 S.	,,,,	- P	Value	engineer:	company:
													ET 800 D. 19.11.			Result	Tuigo	MLK
											16:16 (cuthon					Comment	location: MP	date: 3/3/200:
	<u></u>	-	<u></u>		7	-	-	,	<	۲	4					_		2

















AMS Tracker Thermal Control

Page

9 of 10

* j	©	(
TTCB and condenser tube cutting procedure	Subsystem	Thermal Control
Date	lssue	Doc.ld.
January 2009	issue 3.0	AMSTR-NLR-PR-008
	TTCB and condenser tube cutting procedure Date	Issue Date Jan

	Tube cutting procedure sheet Fill in by hand.			company: engineer:	company: engineer:
Step	Action	Monitoring	Value	Result	Comment
	Cutting position Argon				
	Argon				
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		
10	Flow gaseous nitrogen/argon through the hose prior to connect to the		l		
	Connect the flexible hose to the tube as shown in above figure. Set a	Check flow at			
	fixed gaseous flow	outside			
12	Cut tube				-
13	Make picture of set-up and record picture time				<u> </u>
14	Disconnect tube, clean outside with IPA and lint free cloth &	Flat square surface			
	perform visual inspection of cut surface				
15	Cover tube end with caps and store in a clean box or clean				
	environment for further integration				
16	End cutting of part (mention part number at comments)				

K(E) THE CHANGE Thermal Control AMS Tracker

Subsystem

TTCB and condenser tube cutting procedure

Doc.id. AMSTR-NLR-PR-008

Issue

January 2009 issue 3.0

<i>)</i> - '		X																	
Or a c	200	2		∞		7	6	5		4		ω		2		_	Step		
accu. Then focus angle, welling	capillary tabe cloth 1x	leaving performed Cleaning	Argon)bottle delivering gaseous Argon gas as shown in figure.	Connect the filter and a clean flexible (silicone) hose to a N2-(or	record allies type	Record filter time	Record cutting equipment used	Clean outside tube with IPA and lint-free cloth		Perform visual inspection inlet and outlet tube		Make picture of part		Record pipe part drawing number	performed	Record model (FM1/FM2/QM) for which the cutting of tubes is	Action	Fill in by hand.	Tube cutting procedure sheet
s S	dene a	Sui S			size	Manufact (£1)	Manufacturer, type/serial number		grease	Clean/particles/	time as on photo	Record picture		(Model	Monitoring		
,	Peer	ich me		1	0.43 µm	0.45	1	t ch	12 Rt Scal	point pa	purge 1	metal	with n	DFINE COL	F//2	H T	Value	engineer:	company:
Å	15/0/5/	recked a						tracua.	K.	da	12/2	ځ همده	normal	7			Result	J.v.Es	11/1
	185/	with i			188	2	The	Mek	Jwith	1716	- //	10:4	•	dead	70	7-1	Comment	location:	date: C
	dead	in b-fo			是一种下、	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Relaboor	Metabo cutta	non-ce	le ming	- 11!15.	170 1		I end we	check	10100		77	189/40
	and Charme	20	•	5	۳.		2700	s the	secol	7		Parch	3		0	carti	<u>ح</u> 2	(000 000
Į.	CRawa	200/2009							tric	, pwg.	260	2009			Z E	ling			

or acce, The face to Clear Seek performed to Some of the with take to Clear Seek performed

















TTCB and condenser tube cutting procedure

Doc.ld. AMSTR-NLR-PR-008 Issue Page Date January 2009 issue 3.0 9 of 10

16	5	4	13	12		11		10	9		Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Cutting position Argon	Action	Fill in by hand.	Tube cutting procedure sheet
		Flat square surface			outside	Check flow at			Pressure		Monitoring		
								,	0-4 bar		Value	engineer:	company:
											Result		
			Sec. 04/03/	,	2-1-11-11-11-11-11-11-11-11-11-11-11-11-				deadore		Comment	location:	date:
<	<i>C</i>		2000					~			۷.		

















TTCB and condenser tube cutting procedure

Doc.ld. Page

AMSTR-NLR-PR-008 8 of 10

(ssue Date

January 2009 issue 3.0

	Tube cutting procedure sheet		company:	NIR	date: 05/03/2004
	Fill in by hand.		engineer:	J.v. Es	on:
Step	Action	Monitoring	Value	Result	Comment
1	Record model (FM1/FM2/QM) for which the cutting of tubes is	Model	ı		
	performed	7/1/2			`,
2	Record pipe part drawing number	-888513	198-08	12.51	Concersor.
			-	J	
ယ	Make picture of part	Record picture			14:22
		time as on photo		***	
4	Perform visual inspection inlet and outlet tube	Clean/particles/			
		grease			
5	Clean outside tube with IPA and lint-free cloth				
					1 1
6	Record cutting equipment used	Manufacturer,	1		Metabo + ch ber
		type/serial number			
7	Record filter type	Manufacturer/filter	0.45 µm		14122
		size			14:19
8	Connect the filter and a clean flexible (silicone) hose to a N2-(or		-		<i>)</i> ,
	Argon)bottle delivering gaseous Argon gas as shown in figure.				

















TTCB and condenser tube cutting procedure

Doc.ld.

9 of 10

AMSTR-NLR-PR-008 issue 3.0

ssue Date January 2009

16 E		75	75	14 I	13	12 (- C-	11	ta	10 F	1 6			Step /		درا
End cutting of part (mention part number at comments)	1	Cover tube end with cans and store in a clean box or clean	perform visual inspection of cut surface	Disconnect tube, clean outside with IPA and lint free cloth &	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	tube part	Flow gaseous nitrogen/argon through the hose prior to connect to the	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	→ Argon	Cutting position	Action	Fill in by hand.	Tube cutting procedure sheet
				Flat square surface			outside	Check flow at			Pressure			Monitoring		
										ž	0-4 bar			Value	engineer:	company:
														Result		
					see for pr						6762	•		Comment	location:	date:
C	Ċ		C		(<	<u> </u>			7	<i>C</i> ,		۷.		















TTCB and condenser tube cutting procedure

Page

Doc.ld. AMSTR-NLR-PR-008 8 of 10

issue

January 2009 issue 3.0

	Tube cutting procedure sheet		company:	NLR	date: 05/63/2009
	Fill in by hand.		engineer:	S.V.B	location: 777
Step	Action	Monitoring	Value	Result	Comment / V
1	Record model (FM1/FM2/QM) for which the cutting of tubes is	Model	s		pre-hechest
	performed				'collect cutto
2	Record pipe part drawing number				
ယ	Make picture of part	Record picture			
		time as on photo			
4	Perform visual inspection inlet and outlet tube	Clean/particles/			
		grease			
5	Clean outside tube with IPA and lint-free cloth				
6	Record cutting equipment used	Manufacturer,	1		
		type/serial number			
7	Record filter type	Manufacturer/filter	0.45 μm		
		size			
∞	Connect the filter and a clean flexible (silicone) hose to a N2-(or		1		
	Argon)bottle delivering gaseous Argon gas as shown in figure.				















TTCB and condenser tube cutting procedure

Doc.ld. issue AMSTR-NLR-PR-008 issue 3.0

Date

January 2009

Page

9 of 10

16	15	14	13	12		1	10	÷	9		Step		
End cutting of part (mention part number at comments)	Cover tube end with caps and store in a clean box or clean environment for further integration	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Make picture of set-up and record picture time	Cut tube	fixed gaseous flow	Connect the flexible hose to the tube as shown in above figure. Set a	rlow gaseous nitrogen/argon through the hose prior to connect to the tube part		Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Catting position Argon	Action	Fill in by hand	Tube cutting procedure sheet
		Flat square surface			outside	Check flow at			Pressure		Monitoring		
							ı		0-4 bar		Value	engineer:	company:
											Result		
											Comment	location:	date:
											۷.		